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# 2

COMMON ASSESSMENT TASK

## Level 2 Digital Technologies and Hangarau Matihiko 2020

### 91898 Demonstrate understanding of a computer science concept

Credits: Three

Achievement Criteria		
Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of a computer science concept.	Demonstrate in-depth understanding of a computer science concept.	Demonstrate comprehensive understanding of a computer science concept.

Type your School Code and 9-digit National Student Number (NSN) into the header at the top of this page. (If your NSN has 10 digits, omit the leading zero.)

**Answer all parts of the assessment task in this document.**

Your answer should be presented in 12pt Arial font, within the expanding text boxes, and may only include information you produce during this examination session.

You should aim to write between **800–1500 words** in total.

**Save your finished work as a PDF file** with the file name used in the header at the top of this page ("SchoolCode-YourNSN-91898.pdf").

By saving your work at the end of the examination, you are declaring that this work is your own. NZQA may sample your work to ensure that this is the case.

You must not access the Internet or use any printed or other resources except for this assessment.

## INSTRUCTIONS

Read all parts of the assessment task before you begin.

Select ONE of the following computer science concepts:

- error control
- encryption
- artificial intelligence.

Type your chosen computer science concept in the space below:

Begin your answers on page 3.

**ASSESSMENT TASK**

- (a) Describe at least two examples in which your chosen computer science concept is either **used**, **implemented** or **occurs** in current digital technologies.



(b) **Opportunities** include providing a solution, improving functionality and solving a known issue / risk.

Select ONE of the following two options:

- How **is** your chosen computer science concept **currently** applied to address an opportunity?
- How **could** your chosen computer science concept be applied to address an opportunity?

Copy and paste your chosen option in the space below:

Answer the question about your selected option in the space below:

(c) **Mechanisms**

- (i) Explain the use of an **algorithm** or **technique** used in your chosen computer science concept.

For example, you could explain:

- how the Luhn algorithm works
- the purpose of private / public keys or password hashing
- why an artificial intelligence might be considered as intelligent.

- (ii) Explain the **protocol** or **procedure** used in your chosen computer science concept.

For example, you could explain:

- how an organisation ensures the protection of data by using encryption
- how barcodes are used, and errors identified
- how an artificial intelligence system is used to achieve a purpose.

(d) **Impacts**

Select ONE of the following impacts:

- Ethical issues
- Human factors.

Copy and paste your chosen impact in the space below:

Explain how this impact relates to your chosen computer science concept.

- (e) Comprehensively explain the key problems or issues related to your chosen computer science concept.  
This can include showing links between and expanding on your answers to parts (a)–(d).